



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,484	10/25/2006	Johannes Petrus Zijp	1328-29	9138
23117 7590 09/11/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER NGUYEN, KHANH TUAN				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
09/11/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/574,484

**Applicant(s)**

ZIJP ET AL.

**Examiner**

KHANH T. NGUYEN

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 20-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Status***

1. Claims 1-14 and 20-24 are currently pending in the instant application. Claims 15-19 have been withdrawn from further consideration.

### ***Withdrawn***

2. The objection of claim 2 under 37 CFR 1.75(c) is withdrawn in view of Applicant's remarks. The rejection of claims 1-14 and 20-24 under 35 U.S.C. 103(a) as being unpatentable over Strickler et al. (U.S. Pat. 6,858,306 B1) ) is withdrawn in view of Applicant's remarks.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-11, 13-14 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by JP Pub. 2000-252500 (hereinafter Yoshimi).

With respect to claims 1, 3-11, 13-14 and 20-23, Yoshimi teaches at drawing 1 a transparent electrode 10 comprising of a double-layer structure is formed on a glass substrate 1. The said transparent electrode comprises of a first transparent conducting film 101 and a second transparent conducting film 102 applied on top of each other [0035] and may be used as a solar cell. The said film 101 comprises of  $\text{SnO}_2$  and 1.0 mol. % (i.e. atomic %) of fluorine (F) dopant (i.e. electron donor) [0036]. The film 102 comprises of  $\text{SnO}_2$  and 1.5 atom % of fluorine (F) electron donor [0036]. Yoshimi also teaches film 102 may have an average thickness of 102 is 50-500 nm and the average thickness of film 101 is the difference of the unevenness of film 102 and the average height low of transparent electrode 10 [0018]. The film 102 of Yoshimi is readable on the first film and the film 102 of Yoshimi is readable on the second film.

The reference specifically or inherently meets each of the claimed limitations in their broadest interpretations. The reference is anticipatory.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6, 8-12, 14, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP Pub. 08-043840 (hereinafter Fukuyoshi).

With respect to claims 1-6, 8-11, 14, and 20-24, Fukuyoshi teaches at drawing 1 and drawing 2 an electrode plate for displays. The said electrode plate comprises of a substrate (11, 21) used as a base material that includes glass, ceramics, plastic film and plastic board [0037]. The said substrate 11 is laminated with the transparent electrode layers (12, 22) that consist of a multilayer film (see drawing 1) or bilayer film (see drawing 1) of a career high mobility thin film (12b, 22b) and a career high concentration thin film (12a, 22a). The career high concentration thin film (12a, 22a), which is considered as a first film, is laminated on the substrate (11, 21). The career high mobility thin film (12b, 22b), which is considered as a second film, is laminated on top of the career high concentration thin film (12a, 22a) forming the transparent electrode layers (12, 22). Fukuyoshi teaches the career high mobility (second) thin film (12b, 22b) and a career high concentration (first) thin film (12a, 22a) may contain metallic compounds such as indium oxide, titanium nitride, zirconium nitride, zinc oxide, tin oxide and rhenium oxide [0029]. Fukuyoshi further teaches a career high concentration (first) thin film (12a) and a career high mobility (second) thin film (12b) may each having a thickness of 90 nm [0040]. Fukuyoshi teaches the total transparent electrode (e), i.e. ITO thin film, may be about 300 nm thick (Drawing 4 and [0016]). In one embodiment, Fukuyoshi teaches the career high concentration (first) thin film may comprises of indium oxide thin film that may be doped with 4 or more wt. % (atom %) of dopant and the career high concentration (second) thin film may comprises of indium oxide thin film

that may be doped with zero to 3 wt. % (atom %) of dopant [0035]. Fukuyoshi teaches the said dopant (i.e. electron donor) may be selected from a group of metal or metal oxide of such as tin, zirconium, titanium, germanium, lead, antimony, hafnium, magnesium, scandium, yttrium, lanthan, cerium, praseodymium, neodymium, samarium, thallium, bismuth, vanadium, niobium and tantalum [0030].

Although Fukuyoshi does not expressly suggest the second film (career high mobility thin film) comprises at least 10 percent less dopant than the first film (career high concentration thin film). Nonetheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of dopant as suggest by Fukuyoshi (i.e. a first film containing 4 or more wt. % of dopant and a second film containing 0- 3 wt. % of dopant) and optimizes for the best results, i.e. a second film comprises at least 10 percent less dopant than the first film. *A prima facie* case of obviousness exists because the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the prima facie case of obviousness. See *In re Boesch*, 627 F.2d 272,276,205 USPQ 215,219 (CCPA 1980) and *In re Woodruff* 919 F.2d 1575, 1578,16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990).

Regarding claim 12, Fukuyoshi teaches a transparent first thin oxide film (12a) and a transparent first thin oxide film (12b) may each having a thickness of 90 nm [0040]. Fukuyoshi teaches the total transparent electrode oxide (e), i.e. ITO thin film, may be about 300 nm thick (Drawing 4 and [0016]). Thus, the average particle size of the crystals of the transparent conducting oxide must be less than the upper limited of 500 nm in order to provide a transparent oxide of 90 nm and a total transparent electrode oxide of about 300 nm. If the average particle size of the crystals of the transparent conducting oxide excess 500 nm, it would be impossible to form the transparent oxide layers having a layer thickness as suggested by Fukuyoshi.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-14 and 20-24 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTN/  
08/28/2008

/DOUGLAS MC GINTY/  
Primary Examiner, Art Unit 1796